

What is claimed is:

1. A disc-drive system comprising:
a disc drive, the disc drive including:
 - 5 a disc-drive housing;
 - a disc assembly mounted to rotate within the housing, the disc assembly including at least a first disc surface having a plurality of zones including a predefined first zone having a plurality of sectors of data and a predefined second zone having a plurality of sectors of data and a predefined
 - 10 third zone having a plurality of sectors of data;
 - a first transducer positionable facing the first disc surface to transduce data to and from the first zone and the second zone and the third zone;
 - an address translator that translates a logical block address to a position address and
 - 15 a controller operable to control positioning of the transducer based on the position address, wherein a first predetermined number of spare sectors are allocated to the first zone, and a second predetermined number of spare sectors are allocated to the second zone and third zone combined.
- 20 2. The system according to claim 1, wherein all of the plurality of sectors of data in the first zone are recorded at a predetermined first frequency, all of the plurality of sectors of data in the second zone are recorded at a predetermined second frequency that is different than the first frequency, and all of the plurality of sectors of data in the third zone are recorded at a predetermined third frequency that is
- 25 different than the first frequency and different than the second frequency.

3. The system according to claim 1, wherein the second predetermined number of spare sectors is based on a number of defects found in the second zone and third zone combined, and the first predetermined number of spare sectors is based on a number of defects found in the first zone.
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4. The system according to claim 1, wherein the address translator further comprises a logical zone table, wherein the first zone is located in a first logical zone, and the second zone and third zone are both located in a second logical zone.
- 10 5. The system according to claim 1, wherein the address translator further comprises a logical zone table, and wherein each logical zone includes one or more zones based on a number of defects found in each zone in order that each logical zone includes a similar number of defects.
- 15 6. The system according to claim 5, wherein each logical zone is allocated a number of spare sectors based on the total number of defects found in all of the zones of the logical zone.
- 20 7. The system according to claim 5, wherein each logical zone only includes one or more contiguous zones.
8. The system according to claim 1, wherein the address translator further comprises a logical zone table formed by iteratively combining a plurality of contiguous zones into logical zones in order to create logical zones each including a similar number of defects.
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9. The system according to claim 1, further comprising:
an information-handling system operatively coupled to transmit data to and from the disc drive;
an input/output subsystem operatively coupled to input and output data to the information-handling system; and
a memory operatively coupled to transmit data to and from the information-handling system.
10. A method for determining locations of sectors in a disc drive, comprising steps of:
 - (a) allocating a plurality of zones for data;
 - (b) determining a defect rate in each of the plurality of zones; and
 - (c) allocating spare sectors based on the determined defect rates.
11. The method according to claim 10, further comprising a step of:
 - (d) forming logical zones based on the determined defect rates, each logical zone having one or more of the plurality of zones, in order that each logical zone has a similar total number of defects.
12. The method according to claim 11, wherein the step (c) of allocating further comprises allocating a number of spare sectors for each logical zone based on the total number of defects in that logical zone.
13. The method according to claim 12, further comprising steps of:
 - (e) forming a logical zone table, the logical zone table having one or more zones in each logical zone; and
 - (f) translating a logical block address (LBA) into a physical address using the logical zone table.

14. The method according to claim 11, wherein all the zones in each logical zone having more than one zone are contiguous zones.

15. The method according to claim 11, further comprising steps of:

5 (g) forming a logical zone table, the logical zone table initially having two or more contiguous zones in each tentative logical zone;

(h) determining which one of the tentative logical zones has the fewest total defects, and combining the zones forming that tentative logical zone having the fewest total defects into a single zone, while leaving the other zones as separate; and

10 (i) iteratively repeating steps (g) and (h).

16. The method according to claim 11, further comprising steps of:

(j) iteratively combining the zones into logical zones in order to obtain logical zones each having a similar number of defects;

15 (k) allocating spare sectors to each logical zone based on a number of defects in each respective logical zone; and

(l) translating logical block addresses based on the logical zones.

17. The method according to claim 10, wherein each one of the plurality of zones
20 uses a single transducing frequency that is different than the single transducing frequency of the other zones.

18. The method according to claim 11, further comprising steps of:

(m) iteratively combining the zones into logical zones in order to obtain
25 logical zones each having a similar number of defects;

(n) allocating an equal number of spare sectors to each logical zone; and

(o) translating logical block addresses based on the logical zones.

19. The method according to claim 16, wherein all the zones in each logical zone having more than one zone are contiguous zones.

20. A disc drive system comprising:

5 a rotating disc having a plurality of zones of data including a first zone, a second zone, and a third zone;

a transducer positionable to transduce data to the first, second, and third zones; and

means for allocating spare sectors to the first, second, and third zones and for
10 translating logical block addresses to physical addresses based on the allocation of spare sectors.